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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,664

12/10/2003

Douglas T. Gjerde

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EXAMINER

HYUN, PAUL SANG HWA

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/733,664	<b>Applicant(s)</b> GJERDE ET AL.	
	<b>Examiner</b> PAUL S. HYUN	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,7-11,15-20,23,25 and 27-37 is/are pending in the application.
- 4a) Of the above claim(s) 17-20,23,25 and 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-11,15,16 and 30-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### REMARKS

Claims 1-11, 15-20, 23, 25 and 27-37 are currently pending with claims 17-20, 23, 25 and 27-29 being withdrawn pursuant to a restriction requirement.

Applicant's argument with respect to the restriction requirement has been considered, but it is not persuasive. Specifically, Applicant argues that there would be no additional burden to examine the non-elected claims. This argument is not persuasive because the elected claims are directed toward a device whereas the non-elected claims are directed toward a method for using said device. Because the device is not limited to the specific application recited in the method claims (see restriction requirement), it is not inherent that the examination of the elected claims will identify all the prior art relating to the non-elected invention. Thus, there would be burden on the Examiner to carry out the additional search required to examine the non-elected invention. For the foregoing reason, the restriction is maintained. However, in the event that the product claims are found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **1, 2, 7-9, 11, 34 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. (US 2002/0164824 A1) in view of Haase (US 5,276,062).

Xiao et al. disclose an array of capillary tubes, each capillary tube having a first end, a second end, and an inner surface having extraction agents immobilized thereto (see Abstract and Fig. 1). The extraction agents (e.g. proteins and antibodies (see [0084])) are configured to bind specific biomolecules (e.g. proteins, virus (see [0168])). The capillary tube disclosed by Xiao et al. differs from the claimed invention in that Xiao et al. do not disclose that the capillary tube is coiled.

Haase discloses a capillary for conducting immunoassays wherein the capillary is coiled or spiral in shape (see lines 35-45, col. 3). In light of the disclosure of Haase, it would have been obvious to modify the shape of the capillary disclosed by Xiao et al. such that it is coiled. A coiled capillary would lengthen working surface of the capillary tube without increasing the length of the capillary tube.

Claim **10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Haase as applied to claims 1, 2, 7-9, 11, 34 and 35 and further in view of Smith et al. (US 4,569,794).

Neither Xiao et al. nor Haase disclose the use of metal ions to bind analytes.

Smith et al. disclose the well-known method of immobilized metal ion affinity chromatography (IMAC) (see lines 5-20, col. 1). The reference discloses that IMAC uses immobilized metal ions to bind proteins. In light of the disclosure of Smith et al., it would have been obvious to one of ordinary skill in the art to use metal ions as the antibodies in the modified Xiao et al. capillary to bind proteins that have affinity towards the metal ions.

Claims **15, 16, 36 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Haase as applied to claims 1, 2, 7-9, 11, 34 and 35, and further in view of Kumar et al. (US 5,976,896).

Although Xiao et al. disclose that fluid movement through the capillary can be facilitated by a pump (see [0110]), neither Xiao et al. nor Haase disclose the use of a syringe pump.

Kumar et al. disclose the use of a syringe pump to move fluid through a capillary for purposes of conducting immunoassay (see example 12, col. 44). In light of the disclosure of Kumar et al., it would have been obvious to provide the modified Xiao et al. apparatus with a syringe pump to facilitate fluid movement through the capillary.

Claims **30 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Haase as applied to claims 1, 2, 7-9, 11, 34 and 35 and further in view of Le Febre et al. (US 5,552,042).

Neither Xiao et al. nor Haase disclose the bend radius of the capillary.

Le Febre et al. disclose a coiled capillary wherein the diameter of the coil ranges from 50 microns to 10 inches (see lines 35-40, col. 2). In light of the disclosure of LeFebre et al., it would have been obvious to one of ordinary skill in the art to form the capillary of the modified Xiao et al. apparatus into a coil having a diameter of less than 3 cm if a coil having a diameter less than 3 cm is desired.

Claims **32 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Haase and Le Febre et al. as applied to claims 30 and 31, and further in view of Kumar et al. (US 5,976,896).

Although Xiao et al. disclose that fluid movement through the capillary can be facilitated by a pump (see [0110]), none of Xiao et al., Haase and Le febre et al. disclose the use of a syringe pump.

Kumar et al. disclose the use of a syringe pump to move fluid through a capillary for purposes of conducting immunoassay (see example 12, col. 44). In light of the disclosure of Kumar et al., it would have been obvious to provide the modified Xiao et al. apparatus with a syringe pump to facilitate fluid movement through the capillary.

***Response to Arguments***

Applicant's arguments with respect to the art rejections have been considered but are moot in view of the new grounds of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/  
Examiner, Art Unit 1797

/Jill Warden/  
Supervisory Patent Examiner, Art Unit 1797